

CLAIMS

1. A microparticle comprising:
  - (a) a core which comprises a water insoluble polymer or copolymer, and
  - (b) a shell which comprises a hydrophilic polymer or copolymer and functional groups which are ionic or ionisable;said microparticle having a disease-associated antigen adsorbed at the external surface.
2. A microparticle according to claim 1, wherein the disease-associated antigen is a microbial antigen or a cancer-associated antigen.
3. A microparticle according to claim 1 or 2, wherein the water insoluble polymer is poly(styrene).
4. A microparticle according to claim 1 or 2, wherein the water insoluble polymer is poly(methylmethacrylate).
5. A microparticle according to any one of the preceding claims, wherein the hydrophilic polymer is hemisuccinated polyvinylalcohol.
6. A microparticle according to any one of claims 1 to 4, wherein the hydrophilic copolymer is Eudragit® L100-55 (a copolymer of methacrylic acid and ethyl acrylate).
7. A microparticle according to any of the preceding claims, wherein the particle has a maximum size of from 0.1 to 10µm.
8. A microparticle according to any of the preceding claims, wherein the antigen is a human immunodeficiency virus-1 (HIV-1) antigen.
9. A microparticle according to claim 8, wherein the antigen is HIV-1 Tat protein (SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30 or 32) or an immunogenic fragment thereof.
10. A method of production of a microparticle according to any one of the preceding claims, said method comprising:
  - (a) polymerizing one or more water insoluble monomers in the presence of one or more hydrophilic polymer by dispersion polymerization to form microparticles; and
  - (b) adsorbing a disease-associated antigen at the external surface of said microparticles.
11. A pharmaceutical composition comprising a microparticle according to any one of claims 1 to 9 and a pharmaceutically acceptable excipient
12. A method of generating an immune response in an individual, said

method comprising administering a microparticle according to any one of claims 1 to 9 or a pharmaceutical composition according to claim 11 in a therapeutically effective amount.

13. A method of preventing or treating HIV infection or AIDS, said method comprising administering a microparticle according to claim 8 or 9 in a therapeutically effective amount.

14. A microparticle according to any one of claims 1 to 9 or a pharmaceutical composition according to claim 11 for use in a method of treatment of the human or animal body by therapy or diagnosis.

15. Use of a microparticle according to any one of claims 1 to 9 for the manufacture of a medicament for generating an immune response in an individual.

16. Use of a microparticle according to claim 8 or 9 for the manufacture of a medicament for preventing or treating HIV infection or AIDS.